



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/025,286 | 12/19/2001 | Michael H. Kenison | 22.1444 | 1884 |

25576 7590 09/28/2006

SCHLUMBERGER IPC
ATTN: TIM CURINGTON
555 INDUSTRIAL BOULEVARD, MD-21
SUGAR LAND, TX 77478

| |
|----------|
| EXAMINER |
|----------|

LEE, BENJAMIN C

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2612

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/025,286 | Applicant(s) KENISON ET AL. | |
| | Examiner Benjamin C. Lee | Art Unit 2612 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 92-110 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 92-110 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response To Amendment

Claim Status

1. Claims 92-110 are pending for examination. Claims 1-91 and 111-143 are withdrawn as a result of Applicant's election without traverse of claims 92-110 under restriction.

Claim Rejections - 35 USC § 103

2. Claims 102, 106 and 110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zierolf (WO 00/60780) in view of Nepote (US 6,098,324).

1) Regarding claim 102:

Zierolf discloses an electronic tag apparatus comprising: a circumferential slot ("gap" in Fig. 1 or "groove" or "channel" 44 of Fig. 3) formed in an inner wall of a tubular member (Fig. 3 or Fig. 1); an electronic tag (28) coupled to a circumferential ring (Fig. 3 and page 19, lines 16-23; Fig. 1 and page 13, lines 9-26), the ring disposed in the slot and adapted to secure the electronic tag in place (Figs. 1 & 3);

While Nepote teaches the know use of an undercut type slot to provide mechanical restraint for an electronic tag (Figs. 7-8 and 10; col. 4, lines 52-56 and col. 5, lines 11-14: undercuts 12a-12h and 13; electronic tag 8, potting material 10, slot 9).

In view of the teachings by Zierolf and Nepote, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include the mechanically restraining undercut as taught by Nepote in an electronic tag retaining slot of Zierolf to avoid undesired/unintended loosening and falling off of the electronic tag from its slot.

2) Regarding claim 106, Zierolf and Nepote render all of the claimed subject matter obvious as in claim 102, including:

--the claimed wherein the ring comprises a polymer material (page 19, lines 21-22 of Zierolf).

3) Regarding claim 110, Zierolf and Nepote render obvious all of the claimed subject matter as in claim 102, except:

--specifying the claimed said ring comprises a split ring.

However, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that various resilient material can be used to implement the ring in Zierolf, so that either a split ring configuration or an enclosed ring configuration can be used without changing its intended function in a system such as taught by Zierolf and Nepote.

3. Claims 92, 95 and 107-108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zierolf view of Nepote and Ohashi et al. (JP404019485A with English Abstract).

1) Regarding claim 92, Zierolf and Nepote render obvious all of the claimed subject matter as in the consideration of claim 102, including:

a) Zierolf teaches an electronic tag apparatus comprising: a slot ("gap" in description of Fig. 1; "groove" or "channel" 44 of Fig. 3) formed at a selected azimuthal location in an inner wall of a tubular member (Figs. 1-5); an electronic tag (30) disposed in the slot; and a material (O-ring seal 22 of Fig. 1; RF-transparent material 46 in groove/channel 44 of Fig. 3 and page19, lines 18-23) disposed in the slot adapted to form a barrier between the electronic tag and the inner wall of the tubular member and to physically secure the electronic tag to the slot without specifying the specific technique in which such securing material is being formed or installed in the slot;

Art Unit: 2612

while b) Ohashi et al. teaches the known securing of an electronic tag (6) in a recess (7a) by disposing the tag in the recess (6), and disposing a potting material (20) in the recess, so that the potting material is adapted to form a barrier between the tag and the recess wall and to adhesively bond the tag to the recess (Abstract translation and Figs. 3 and 10).

In view of the teachings by Zierolf, Nepote and Ohashi et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to alternatively or additionally use a known potting technique of Ohashi et al. for securing of the tag and/or the installation ring in the slot in Zierolf and Nepote using the securing material so as to provide a secure mounting for the tag in the inner wall of the tubular member.

2) Regarding claim 95, Zierolf, Nepote and Ohashi et al. render all of the claimed subject matter obvious as in the consideration of claim 92, wherein the claimed plurality of slots having potted electronic tags is met by Fig. 2 of Zierolf.

3) Regarding claims 107-108, Zierolf and Nepote render obvious all of the claimed subject matter as in claim 102, except:

--specifying the claimed said ring comprises a ceramic or epoxy material.

With the combination of Zierolf, Nepote and Ohashi et al. as established in the consideration of claim 92, potting material in addition to the installation ring is used to secure the tag in the slot. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that with the use of the potting material, the ring in Zierolf, Nepote and Ohashi et al. can be implemented using materials including epoxy and ceramic material without deviating from the intended functions or unexpected results.

Art Unit: 2612

4. Claims 96 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Zierolf in view of Ohashi et al.

1) Regarding claim 96:

a) Zierolf teaches an electronic tag apparatus comprising: a circumferential undercut slot (“gap” in description of Fig. 1; “groove” or “channel” 44 of Fig. 3, whereby “undercut” is met by the view of Fig. 3 in which the slot is viewed vertically showing a concave with overhanging on the top portion) formed in an inner wall of a tubular member (Figs. 1-5); an electronic tag (30) disposed in the undercut slot; and a material (O-ring seal 22 of Fig. 1; RF-transparent material 46 in groove/channel 44 of Fig. 3 and page 19, lines 18-23) disposed in the undercut slot adapted to form a barrier between the electronic tag and the inner wall of the tubular member and to physically secure the electronic tag to the slot without specifying the specific technique in which such securing material is being formed or installed in the slot;

while b) Ohashi et al. teaches the known securing of an electronic tag (6) in a recess (7a) by disposing the tag in the recess (6), and disposing a potting material (20) in the recess, so that the potting material is adapted to form a barrier between the tag and the recess wall and to adhesively bond the tag to the recess (Abstract translation and Figs. 3 and 10).

In view of the teachings by Zierolf and Ohashi et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to alternatively or additionally use a known potting technique of Ohashi et al. for securing of the tag and/or the installation ring in the slot in Zierolf using the securing material so as to provide a secure mounting for the tag in the inner wall of the tubular member.

5. Claims 93-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zierolf in view of Neptote, Ohashi et al. and Heisele et al. (DE4238225A1 with English Abstract).

1) Regarding claims 93-94, Zierolf, Neptote and Ohashi et al. render all of the claimed subject matter obvious as in claim 92, except:

--the claimed further comprising a cover adapted to be positioned in the slot and to cover at least a portion of the electronic tag, wherein the cover comprises a flange adapted to mechanically secure the cover in the slot.

Heisele et al. teaches mounting of an electronic tag (transponder 3) in a recess using moulded resin 4 and cover 5 having flange for mechanical securing in the recess as claimed (See English Abstract and Fig. 4).

In view of the teachings by Zierolf, Neptote, Ohashi et al. and Heisele et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to additionally use a flanged cover as taught by Heisele et al. to secure the electronic tag in the potted slot in Zierolf, Neptote and Ohashi et al. as an additional layer of protecting for ensuring the intended operability of the electronic tag especially under harsh environments of the bore hole pipe environment in Zierolf.

6. Claims 103-105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zierolf in view of Neptote and Forster et al. (US6469627).

1) Regarding claim 103, Zierolf and Neptote render obvious all of the claimed subject matter as in claim 102, except:

--the claimed wherein the circumferential ring comprises a flexible metal installation ring adapted to deform when being inserted into the slot and to return to a substantially un-deformed shape after insertion.

Zierolf teaches use of a resilient O-ring 22 for securing the tag 30 to the slot 20 on the inner surface of the tubular member (page 13, lines 9-24) without specifying its material, and use of resilient ring of RF-transparent material for securing tag 30 in slot 44 in Fig. 3.

In the same art of mounting an electronic tag in a slot, Forster teaches using an installation ring of resilient, shape-memory material (col. 3, lines 24-40 and col. 3, line 59 to col. 4, line 4) adapted to deform when being inserted into the slot and to return to a substantially un-deformed shape after insertion so as to friction-fit in the slot (Fig. 4B).

In view of the teachings by Zierolf, Nepote and Forster et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to utilize resilient, deformable material adapted for friction-fit in the slot as taught by Forster et al. to implement the installation ring in Zierolf and Nepote to better secure the tag in the slot of the tubular member, and furthermore, that various materials known in the art that is resilient and able to be deformed under applied force and thereafter returned to its default form/shape during installation as described by Forster, including metal, can be used to implement such installation ring without unexpected results, as long as when using non-RF transparent material such as metal, appropriate measure is taken to ensure adequate communication from the tag, such as by using a gap in the metal ring through which signals can be emanated, by mounting the tag on the exterior surface of the metal ring, etc.

Art Unit: 2612

2) Regarding claim 104, Zierolf and Nepote render obvious all of the claimed subject matter as in claim 102, except:

--the claimed wherein the tag comprises a ratchet installation ring adapted to radially expand so as to fit within the circumferential slot.

Zierolf teaches use of a resilient O-ring 22 for securing the tag 30 to the slot 20 on the inner surface of the tubular member (page 13, lines 9-24) without specifying its material, and use of resilient ring of RF-transparent material for securing tag 30 in slot 44 in Fig. 3.

In the same art of mounting an electronic tag in a slot, Forster teaches using an installation ring of resilient, shape-memory material (col. 3, lines 24-40 and col. 3, line 59 to col. 4, line 4) adapted to deform when being inserted into the slot and to expand to a substantially undeformed shape after insertion so as to friction-fit in the slot (Fig. 4B).

In view of the teachings by Zierolf, Nepote and Forster et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to utilize resilient, deformable material adapted for friction-fit in the slot as taught by Forster et al. to implement the installation ring in Zierolf and Nepote to better secure the tag in the slot of the tubular member, and furthermore, to include a well known ratchet in the ring as a means of adjusting the diameter of the ring to conform to various sizes of tubes/pipes intended for installation.

3) Regarding claim 105, Zierolf and Nepote render obvious all of the claimed subject matter as in claim 102, except:

--the claimed wherein the tag comprises biased tabs formed thereon and adapted to compress so the tag can be inserted in the slot and to release into a securing position after insertion.

Zierolf teaches use of a resilient O-ring 22 for securing the tag 30 to the slot 20 on the inner surface of the tubular member (page 13, lines 9-24) without specifying its material, and use of resilient ring of RF-transparent material for securing tag 30 in slot 44 in Fig. 3.

In the same art of mounting an electronic tag in a slot, Forster teaches using an installation ring of resilient, shape-memory material (col. 3, lines 24-40 and col. 3, line 59 to col. 4, line 4) with biased tabs (the 2 ends in Fig. 4B) adapted to deform under applied force when being inserted into the slot and to expand to a substantially un-deformed shape after insertion so as to friction-fit in the slot (Fig. 4B).

In view of the teachings by Zierolf, Nepote and Ohashi et al. and Forster et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to utilize a resilient, deformable structure having biased tabs that holds the tag and adapted for friction-fit in the slot as taught by Forster et al. to implement the installation ring in Zierolf and Nepote to better secure the tag in the slot of the tubular member.

7. Claim 109 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zierolf in view of Nepote and Savage et al. (US 2003/0156033A1).

1) Regarding claim 109, Zierolf and Nepote render obvious all of the claimed subject matter as in claim 102, except:

--the claimed wherein the circumferential ring comprises ridges formed on an outer surface thereof and adapted to axially secure the ring in place in the slot.

Zierolf teaches use of a resilient O-ring 22 for securing the tag 30 to the slot 20 on the inner surface of the tubular member (page 13, lines 9-24), and use of resilient ring for securing tag 30 in slot 44 in Fig. 3.

In the same art of mounting an electronic tag in a slot on a surface of a tubular member, Savage et al. teaches using an installation member having ridges formed on an outer surface thereof and adapted to axially secure the installation member in place in the slot (Fig. 5).

In view of the teachings by Zierolf, Nepote and Savage et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include ridges as taught by Savage et al. on the outer surface of the installation ring of Zierolf and Nepote to cooperate with ridges on the slot to better secure the tag in the slot of the tubular member by virtue of the mechanical/frictional engagement of the ridges.

8. Claims 97-101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zierolf in view of Ohashi et al. and Forster et al.

1) Regarding claims 97-99, Zierolf and Ohashi et al. render all of the claimed subject matter obvious as in claim 96, except:

--the claimed metal, polytetrafluoroethylene, or flexible epoxy installation ring adapted to deform when being inserted into the slot and to return to a substantially un-deformed shape after insertion.

Zierolf teaches use of a resilient O-ring 22 for securing the tag 30 to the slot 20 on the inner surface of the tubular member (page 13, lines 9-24) without specifying its material, or use of resilient ring of RF-transparent material for securing tag 30 in slot 44 in Fig. 3.

In the same art of mounting an electronic tag in a slot, Forster teaches using an installation ring of resilient, shape-memory material (col. 3, lines 24-40 and col. 3, line 59 to col. 4, line 4) adapted to deform when being inserted into the slot and to return to a substantially un-deformed shape after insertion so as to friction-fit in the slot (Fig. 4B).

Art Unit: 2612

In view of the teachings by Zierolf, Ohashi et al. and Forster et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to utilize resilient, deformable material adapted for friction-fit in the slot as taught by Forster et al. to implement the installation ring in Zierolf and Ohashi et al. to better secure the tag in the slot of the tubular member, and furthermore, that various materials known in the art that is resilient and able to be deformed under applied force and thereafter returned to its default form/shape during installation as described by Forster, including metal, polytetrafluoroethylene, flexible epoxy, etc., can be used to implement such installation ring without unexpected results, as long as when using non-RF transparent material such as metal, appropriate measure is taken to ensure adequate communication from the tag, such as by using a gap in the metal ring through which signals can be emanated, by mounting the tag on the exterior surface of the metal ring, etc.

2) Regarding claim 100, Zierolf and Ohashi et al. render all of the claimed subject matter obvious as in claim 96, except:

--the claimed wherein the tag comprises a ratchet installation ring adapted to radially expand so as to fit within the circumferential slot.

Zierolf teaches use of a resilient O-ring 22 for securing the tag 30 to the slot 20 on the inner surface of the tubular member (page 13, lines 9-24).

In the same art of mounting an electronic tag in a slot, Forster teaches using an installation ring of resilient, shape-memory material (col. 3, lines 24-40 and col. 3, line 59 to col. 4, line 4) adapted to deform when being inserted into the slot and to expand to a substantially undeformed shape after insertion so as to friction-fit in the slot (Fig. 4B).

Art Unit: 2612

In view of the teachings by Zierolf, Ohashi et al. and Forster et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to utilize resilient, deformable material adapted for friction-fit in the slot as taught by Forster et al. to implement the installation ring in Zierolf and Ohashi et al. to better secure the tag in the slot of the tubular member, and furthermore, to include a well known ratchet in the ring as a means of adjusting the diameter of the ring to conform to various sizes of tubes/pipes intended for installation.

3) Regarding claim 101, Zierolf and Ohashi et al. render all of the claimed subject matter obvious as in claim 96, except:

--the claimed wherein the tag comprises biased tabs formed thereon and adapted to compress so the tag can be inserted in the slot and to release into a securing position after insertion.

Zierolf teaches use of a resilient O-ring 22 for securing the tag 30 to the slot 20 on the inner surface of the tubular member (page 13, lines 9-24).

In the same art of mounting an electronic tag in a slot, Forster teaches using an installation ring of resilient, shape-memory material (col. 3, lines 24-40 and col. 3, line 59 to col. 4, line 4) with biased tabs (the 2 ends in Fig. 4B) adapted to deform under applied force when being inserted into the slot and to expand to a substantially un-deformed shape after insertion so as to friction-fit in the slot (Fig. 4B).

In view of the teachings by Zierolf, Ohashi et al. and Forster et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to utilize a resilient, deformable structure having biased tabs that holds the tag and adapted for friction-fit in

the slot as taught by Forster et al. to implement the installation ring in Zierolf and Ohashi et al. to better secure the tag in the slot of the tubular member.

Response to Arguments

9. Applicant's arguments filed 7/20/06 have been fully considered but they are not persuasive.

1) Claims 96-101 have not been amended to the full extent of “the slot comprising an undercut adapted to provide mechanical restraint for an electronic tag” as argued or as amended in claims 92, 95 and 102. As such, previous Office action rejection for claims 96-101 still stand (see above and previous Office action rejection of claims 96-101).

2) Regarding amended claims 92-95 and 102-110, new grounds of rejection to address the amended portion using the new reference of Nepote in combination with the previously cited prior art has been applied, necessitated by the amendment. See above rejection for full detail.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 2612

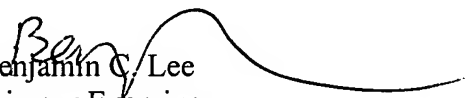
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (571) 272-2963.

The examiner can normally be reached on Mon -Thu 9:00Am-5:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Benjamin C. Lee
Primary Examiner
Art Unit 2612

B.L.